

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 09/S29,722

Source: IFW16

Date Processed by STIC: 2/28/07

# ***ENTERED***



IFW16

## RAW SEQUENCE LISTING

DATE: 02/28/2007

PATENT APPLICATION: US/09/529,722

TIME: 10:22:09

Input Set : A:\seqlsiting.txt

Output Set: N:\CRF4\02282007\I529722.raw

3 <110> APPLICANT: Squirrel, David *OK*  
 5 <120> TITLE OF INVENTION: Expression system  
 7 <130> FILE REFERENCE: 1498-139  
 9 <140> CURRENT APPLICATION NUMBER: US 09/529,722  
 10 <141> CURRENT FILING DATE: 2000-04-19  
 12 <160> NUMBER OF SEQ ID NOS: 5  
 14 <170> SOFTWARE: PatentIn version 3.3  
 16 <210> SEQ ID NO: 1  
 17 <211> LENGTH: 550  
 18 <212> TYPE: PRT  
 19 <213> ORGANISM: Photinus pyralis  
 21 <400> SEQUENCE: 1  
 23 Met Glu Asp Ala Lys Asn Ile Lys Lys Gly Pro Ala Pro Phe Tyr Pro  
 24 1 5 10 15  
 27 Leu Glu Asp Gly Thr Ala Gly Glu Gln Leu His Lys Ala Met Lys Arg  
 28 20 25 30  
 31 Tyr Ala Leu Val Pro Gly Thr Ile Ala Phe Thr Asp Ala His Ile Glu  
 32 35 40 45  
 35 Val Asn Ile Thr Tyr Ala Glu Tyr Phe Glu Met Ser Val Arg Leu Ala  
 36 50 55 60  
 39 Glu Ala Met Lys Arg Tyr Gly Leu Asn Thr Asn His Arg Ile Val Val  
 40 65 70 75 80  
 43 Cys Ser Glu Asn Ser Leu Gln Phe Phe Met Pro Val Leu Gly Ala Leu  
 44 85 90 95  
 47 Phe Ile Gly Val Ala Val Ala Pro Ala Asn Asp Ile Tyr Asn Glu Arg  
 48 100 105 110  
 51 Glu Leu Leu Asn Ser Met Asn Ile Ser Gln Pro Thr Val Val Phe Val  
 52 115 120 125  
 55 Ser Lys Lys Gly Leu Gln Lys Ile Leu Asn Val Gln Lys Lys Leu Pro  
 56 130 135 140  
 59 Ile Ile Gln Lys Ile Ile Ile Met Asp Ser Lys Thr Asp Tyr Gln Gly  
 60 145 150 155 160  
 63 Phe Gln Ser Met Tyr Thr Phe Val Thr Ser His Leu Pro Pro Gly Phe  
 64 165 170 175  
 67 Asn Glu Tyr Asp Phe Val Pro Glu Ser Phe Asp Arg Asp Lys Thr Ile  
 68 180 185 190  
 71 Ala Leu Ile Met Asn Ser Ser Gly Ser Thr Gly Leu Pro Lys Gly Val  
 72 195 200 205  
 75 Ala Leu Pro His Arg Thr Ala Cys Val Arg Phe Ser His Ala Arg Asp  
 76 210 215 220  
 79 Pro Ile Phe Gly Asn Gln Ile Ile Pro Asp Thr Ala Ile Leu Ser Val  
 80 225 230 235 240  
 83 Val Pro Phe His His Gly Phe Gly Met Phe Thr Thr Leu Gly Tyr Leu

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/529,722

DATE: 02/28/2007

TIME: 10:22:09

Input Set : A:\seqlsiting.txt

Output Set: N:\CRF4\02282007\I529722.raw

```

84          245          250          255
87 Ile Cys Gly Phe Arg Val Val Leu Met Tyr Arg Phe Glu Glu Glu Leu
88          260          265          270
91 Phe Leu Arg Ser Leu Gln Asp Tyr Lys Ile Gln Ser Ala Leu Leu Val
92          275          280          285
95 Pro Thr Leu Phe Ser Phe Phe Ala Lys Ser Thr Leu Ile Asp Lys Tyr
96          290          295          300
99 Asp Leu Ser Asn Leu His Glu Ile Ala Ser Gly Gly Ala Pro Leu Ser
100 305          310          315          320
103 Lys Glu Val Gly Glu Ala Val Ala Lys Arg Phe His Leu Pro Gly Ile
104          325          330          335
107 Arg Gln Gly Tyr Gly Leu Thr Glu Thr Thr Ser Ala Ile Leu Ile Thr
108          340          345          350
111 Pro Glu Gly Asp Asp Lys Pro Gly Ala Val Gly Lys Val Val Pro Phe
112          355          360          365
115 Phe Glu Ala Lys Val Val Asp Leu Asp Thr Gly Lys Thr Leu Gly Val
116          370          375          380
119 Asn Gln Arg Gly Glu Leu Cys Val Arg Gly Pro Met Ile Met Ser Gly
120 385          390          395          400
123 Tyr Val Asn Asn Pro Glu Ala Thr Asn Ala Leu Ile Asp Lys Asp Gly
124          405          410          415
127 Trp Leu His Ser Gly Asp Ile Ala Tyr Trp Asp Glu Asp Glu His Phe
128          420          425          430
131 Phe Ile Val Asp Arg Leu Lys Ser Leu Ile Lys Tyr Lys Gly Tyr Gln
132          435          440          445
135 Val Ala Pro Ala Glu Leu Glu Ser Ile Leu Leu Gln His Pro Asn Ile
136          450          455          460
139 Phe Asp Ala Gly Val Ala Gly Leu Pro Asp Asp Ala Gly Glu Leu
140 465          470          475          480
143 Pro Ala Ala Val Val Leu Glu His Gly Lys Thr Met Thr Glu Lys
144          485          490          495
147 Glu Ile Val Asp Tyr Val Ala Ser Gln Val Thr Thr Ala Lys Lys Leu
148          500          505          510
151 Arg Gly Gly Val Val Phe Val Asp Glu Val Pro Lys Gly Leu Thr Gly
152          515          520          525
155 Lys Leu Asp Ala Arg Lys Ile Arg Glu Ile Leu Ile Lys Ala Lys Lys
156          530          535          540
159 Gly Gly Lys Ser Lys Leu
160 545          550
163 <210> SEQ ID NO: 2
164 <211> LENGTH: 548
165 <212> TYPE: PRT
166 <213> ORGANISM: Luciola cruciata
168 <400> SEQUENCE: 2
170 Met Glu Asn Met Glu Asn Asp Glu Asn Ile Val Val Gly Pro Lys Pro
171 1          5          10          15
174 Phe Tyr Pro Ile Glu Glu Gly Ser Ala Gly Thr Gln Leu Arg Lys Tyr
175          20          25          30
178 Met Glu Arg Tyr Ala Lys Leu Gly Ala Ile Ala Phe Thr Asn Ala Val

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/529,722

DATE: 02/28/2007

TIME: 10:22:09

Input Set : A:\seqlsiting.txt

Output Set: N:\CRF4\02282007\I529722.raw

179		35		40		45											
182	Thr	Gly	Val	Asp	Tyr	Ser	Tyr	Ala	Glu	Tyr	Leu	Glu	Lys	Ser	Cys	Cys	
183		50					55					60					
186	Leu	Gly	Lys	Ala	Leu	Gln	Asn	Tyr	Gly	Leu	Val	Val	Asp	Gly	Arg	Ile	
187	65					70					75					80	
190	Ala	Leu	Cys	Ser	Glu	Asn	Cys	Glu	Glu	Phe	Phe	Ile	Pro	Val	Ile	Ala	
191				85						90					95		
194	Gly	Leu	Phe	Ile	Gly	Val	Gly	Val	Ala	Pro	Thr	Asn	Glu	Ile	Tyr	Thr	
195				100					105					110			
198	Leu	Arg	Glu	Leu	Val	His	Ser	Leu	Gly	Ile	Ser	Lys	Pro	Thr	Ile	Val	
199			115					120					125				
202	Phe	Ser	Ser	Lys	Lys	Gly	Leu	Asp	Lys	Val	Ile	Thr	Val	Gln	Lys	Thr	
203		130					135						140				
206	Val	Thr	Thr	Ile	Lys	Thr	Ile	Val	Ile	Leu	Asp	Ser	Lys	Val	Asp	Tyr	
207	145					150					155					160	
210	Arg	Gly	Tyr	Gln	Cys	Leu	Asp	Thr	Phe	Ile	Lys	Arg	Asn	Thr	Pro	Pro	
211				165					170						175		
214	Gly	Phe	Gln	Ala	Ser	Ser	Phe	Lys	Thr	Val	Glu	Val	Asp	Arg	Lys	Glu	
215				180					185					190			
218	Gln	Val	Ala	Leu	Ile	Met	Asn	Ser	Ser	Gly	Ser	Thr	Gly	Leu	Pro	Lys	
219			195					200					205				
222	Gly	Val	Gln	Leu	Thr	His	Glu	Asn	Thr	Val	Thr	Arg	Phe	Ser	His	Ala	
223		210					215					220					
226	Arg	Asp	Pro	Ile	Tyr	Gly	Asn	Gln	Val	Ser	Pro	Gly	Thr	Ala	Val	Leu	
227	225					230					235					240	
230	Thr	Val	Val	Pro	Phe	His	His	Gly	Phe	Gly	Met	Phe	Thr	Thr	Leu	Gly	
231				245					250					255			
234	Tyr	Leu	Ile	Cys	Gly	Phe	Arg	Val	Val	Met	Leu	Thr	Lys	Phe	Asp	Glu	
235			260					265					270				
238	Glu	Thr	Phe	Leu	Lys	Thr	Leu	Gln	Asp	Tyr	Lys	Cys	Thr	Ser	Val	Ile	
239			275				280					285					
242	Leu	Val	Pro	Thr	Leu	Phe	Ala	Ile	Leu	Asn	Lys	Ser	Glu	Leu	Leu	Asn	
243		290					295					300					
246	Lys	Tyr	Asp	Leu	Ser	Asn	Leu	Val	Glu	Ile	Ala	Ser	Gly	Gly	Ala	Pro	
247	305					310					315					320	
250	Leu	Ser	Lys	Glu	Val	Gly	Glu	Ala	Val	Ala	Arg	Arg	Phe	Asn	Leu	Pro	
251				325					330					335			
254	Gly	Val	Arg	Gln	Gly	Tyr	Gly	Leu	Thr	Glu	Thr	Thr	Ser	Ala	Ile	Ile	
255				340					345					350			
258	Ile	Thr	Pro	Glu	Gly	Asp	Asp	Lys	Pro	Gly	Ala	Ser	Gly	Lys	Val	Val	
259			355				360						365				
262	Pro	Leu	Phe	Lys	Ala	Lys	Val	Ile	Asp	Leu	Asp	Thr	Lys	Lys	Ser	Leu	
263		370					375					380					
266	Gly	Pro	Asn	Arg	Arg	Gly	Glu	Val	Cys	Val	Lys	Gly	Pro	Met	Leu	Met	
267	385					390					395					400	
270	Lys	Gly	Tyr	Val	Asn	Asn	Pro	Glu	Ala	Thr	Lys	Glu	Leu	Ile	Asp	Glu	
271				405					410					415			
274	Glu	Gly	Trp	Leu	His	Thr	Gly	Asp	Ile	Gly	Tyr	Tyr	Asp	Glu	Glu	Lys	
275				420				425					430				

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/529,722

DATE: 02/28/2007

TIME: 10:22:09

Input Set : A:\seqlsiting.txt

Output Set: N:\CRF4\02282007\I529722.raw

```

278 His Phe Phe Ile Val Asp Arg Leu Lys Ser Leu Ile Lys Tyr Lys Gly
279          435                      440                      445
282 Tyr Gln Val Pro Pro Ala Glu Leu Glu Ser Val Leu Leu Gln His Pro
283          450                      455                      460
286 Ser Ile Phe Asp Ala Gly Val Ala Gly Val Pro Asp Pro Val Ala Gly
287 465          470                      475                      480
290 Glu Leu Pro Gly Ala Val Val Val Leu Glu Ser Gly Lys Asn Met Thr
291          485                      490                      495
294 Glu Lys Glu Val Met Asp Tyr Val Ala Ser Gln Val Ser Asn Ala Lys
295          500                      505                      510
298 Arg Leu Arg Gly Gly Val Arg Phe Val Asp Glu Val Pro Lys Gly Leu
299          515                      520                      525
302 Thr Gly Lys Ile Asp Gly Arg Ala Ile Arg Glu Ile Leu Lys Lys Pro
303          530                      535                      540
306 Val Ala Lys Met
307 545
310 <210> SEQ ID NO: 3
311 <211> LENGTH: 548
312 <212> TYPE: PRT
313 <213> ORGANISM: Luciola lateralis
315 <400> SEQUENCE: 3
317 Met Glu Asn Met Glu Asn Asp Glu Asn Ile Val Tyr Gly Pro Glu Pro
318 1          5                      10                      15
321 Phe Tyr Pro Ile Glu Glu Gly Ser Ala Gly Ala Gln Leu Arg Lys Tyr
322          20                      25                      30
325 Met Asp Arg Tyr Ala Lys Leu Gly Ala Ile Ala Phe Thr Asn Ala Leu
326          35                      40                      45
329 Thr Gly Val Asp Tyr Thr Tyr Ala Glu Tyr Leu Glu Lys Ser Cys Cys
330          50                      55                      60
333 Leu Gly Glu Ala Leu Lys Asn Tyr Gly Leu Val Val Asp Gly Arg Ile
334 65          70                      75                      80
337 Ala Leu Cys Ser Glu Asn Cys Glu Glu Phe Phe Ile Pro Val Leu Ala
338          85                      90                      95
341 Gly Leu Phe Ile Gly Val Gly Val Ala Pro Thr Asn Glu Ile Tyr Thr
342          100                     105                     110
345 Leu Arg Glu Leu Val His Ser Leu Gly Ile Ser Lys Pro Thr Ile Val
346          115                     120                     125
349 Phe Ser Ser Lys Lys Gly Leu Asp Lys Val Ile Thr Val Gln Lys Thr
350          130                     135                     140
353 Val Thr Ala Ile Lys Thr Ile Val Ile Leu Asp Ser Lys Val Asp Tyr
354 145          150                     155                     160
357 Arg Gly Tyr Gln Ser Met Asp Asn Phe Ile Lys Lys Asn Thr Pro Gln
358          165                     170                     175
361 Gly Phe Lys Gly Ser Ser Phe Lys Thr Val Glu Val Asn Arg Lys Glu
362          180                     185                     190
365 Gln Val Ala Leu Ile Met Asn Ser Ser Gly Ser Thr Gly Leu Pro Lys
366          195                     200                     205
369 Gly Val Gln Leu Thr His Glu Asn Ala Val Thr Arg Phe Ser His Ala
370          210                     215                     220

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/529,722

DATE: 02/28/2007

TIME: 10:22:09

Input Set : A:\seqlsiting.txt

Output Set: N:\CRF4\02282007\I529722.raw

```

373 Arg Asp Pro Ile Tyr Gly Asn Gln Val Ser Pro Gly Thr Ala Ile Leu
374 225                230                235                240
377 Thr Val Val Pro Phe His His Gly Phe Gly Met Phe Thr Thr Leu Gly
378                245                250                255
381 Tyr Leu Thr Cys Gly Phe Arg Ile Val Met Leu Thr Lys Phe Asp Glu
382                260                265                270
385 Glu Thr Phe Leu Lys Thr Leu Gln Asp Tyr Lys Cys Ser Ser Val Ile
386                275                280                285
389 Leu Val Pro Thr Leu Phe Ala Ile Leu Asn Arg Ser Glu Leu Leu Asp
390                290                295                300
393 Lys Tyr Asp Leu Ser Asn Leu Val Glu Ile Ala Ser Gly Gly Ala Pro
394 305                310                315                320
397 Leu Ser Lys Glu Ile Gly Glu Ala Val Ala Arg Arg Phe Asn Leu Pro
398                325                330                335
401 Gly Val Arg Gln Gly Tyr Gly Leu Thr Glu Thr Thr Ser Ala Ile Ile
402                340                345                350
405 Ile Thr Pro Glu Gly Asp Asp Lys Pro Gly Ala Ser Gly Lys Val Val
406                355                360                365
409 Pro Leu Phe Lys Ala Lys Val Ile Asp Leu Asp Thr Lys Lys Thr Leu
410                370                375                380
413 Gly Pro Asn Arg Arg Gly Glu Val Cys Val Lys Gly Pro Met Leu Met
414 385                390                395                400
417 Lys Gly Tyr Val Asp Asn Pro Glu Ala Thr Arg Glu Ile Ile Asp Glu
418                405                410                415
421 Glu Gly Trp Leu His Thr Gly Asp Ile Gly Tyr Tyr Asp Glu Glu Lys
422                420                425                430
425 His Phe Phe Ile Val Asp Arg Leu Lys Ser Leu Ile Lys Tyr Lys Gly
426                435                440                445
429 Tyr Gln Val Pro Pro Ala Glu Leu Glu Ser Val Leu Leu Gln His Pro
430                450                455                460
433 Asn Ile Phe Asp Ala Gly Val Ala Gly Val Pro Asp Pro Ile Ala Gly
434 465                470                475                480
437 Glu Leu Pro Gly Ala Val Val Val Leu Glu Lys Gly Lys Ser Met Thr
438                485                490                495
441 Glu Lys Glu Val Met Asp Tyr Val Ala Ser Gln Val Ser Asn Ala Lys
442                500                505                510
445 Arg Leu Arg Gly Gly Val Arg Phe Val Asp Glu Val Pro Lys Gly Leu
446                515                520                525
449 Thr Gly Lys Ile Asp Gly Lys Ala Ile Arg Glu Ile Leu Lys Lys Pro
450                530                535                540
453 Val Ala Lys Met
454 545
457 <210> SEQ ID NO: 4
458 <211> LENGTH: 548
459 <212> TYPE: PRT
460 <213> ORGANISM: Luciola mingrelica
462 <400> SEQUENCE: 4
464 Met Glu Met Glu Lys Glu Glu Asn Val Val Tyr Gly Pro Leu Pro Phe
465 1                5                10                15

```

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/09/529,722

DATE: 02/28/2007

TIME: 10:22:10

Input Set : A:\seqlsiting.txt

Output Set: N:\CRF4\02282007\I529722.raw